

REMARKS

Applicants respectfully request reconsideration of the above-identified application. Claims 1-15 and 17-40 remain in this application. Claim 1 is amended to incorporate the subject matter of dependent claim 16, which has been canceled. Dependent claim 6 is amended, and dependent claims 37-40 are added, to claim over several claims the subject matter originally presented in the Markush group of claim 6. Claim 22 is amended and claims 27-40 are added to more particularly point out and distinctly claim the inventive subject matter.

Attached is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned "Version with Markings to Show Changes Made."

I. Art Rejection

As originally presented, claims 1-26 were rejected under 35 U.S.C. §103(a) as obvious in view of JP 9-302264 to **Nakai** combined with McIntyre, "UV-Cured Durable Top Coats: A Replacement for OPP & PET Film Laminations," Presented at Future-Pak 1997, October 28-29, 1997 ("**McIntyre I**"); Ravijst, "Radiation Cure Applications in the Packaging Industry," Packaging India, pgs. 107-109 (Dec. '97) ("**Ravijst**"); McIntyre, "The Practical Implications of EB Hybrids", pp. 76-78, Converting Magazine, February 1996 ("**McIntyre II**"), U.S. Patent 3,989,609 to **Brack**; U.S. Statutory Invention Registration H304 to **Vorrier**; and alleged Applicants' admission of the prior art. Applicants respectfully traverse this rejection as conceivably applied to the pending claims.

Applicants respectfully submit that a *prima facie* case of obviousness has not been established to shift the burden of rebuttal to the Applicants. One of the requirements of a *prima facie* case of obviousness is that the applied prior art references must teach or suggest *all* of the claim limitations. MPEP §706.02(j). A claimed invention is not obvious in view of a combination of references that does not teach or suggest all of the claim recitations. MPEP §2143.03.

With respect to amended independent claim 1 (corresponding to originally presented dependent claim 16, now canceled), none of the applied references taken alone or in

combination, suggest a radiation-curable varnish that "includes less than about 20 % monofunctional monomer" as recited in amended claim 1. To the direct contrary, the Examples 1-4 of Nakai teach a radiation-curable varnish having 30 weight parts (i.e., 30 weight %) acryloylmorpholine, which is a monofunctional monomer. The other applied references fail to supplement the above-noted shortcoming of Nakai.

Dependent claims 2-15, 17, and 27-40 include further recitations to those of claim 1 and are therefore further patentable over the proposed combination of references.

With respect to independent claim 18, none of the references taken either alone or in combination teach or suggest the claim recitation "wherein the weight of the radiation-cured varnish per unit area of substrate film in the portion of the radiation-cured varnish extending into the heat-sealed region is at least substantially equal to the weight of radiation-cured varnish per unit area of substrate film outside of the heat-sealed region." None of the references disclose or suggest radiation-cured overprint varnish in a heat sealed region at all, much less a packaged food where "the radiation-cured varnish extending into the heat-sealed region is at least substantially equal to the weight of radiation-cured varnish per unit area of substrate film outside of the heat-sealed region."

Dependent claims 19-21 include further recitations to those of independent claim 18, and are therefore further patentable over the proposed combination of references.

With respect to independent amended claim 22, none of the references taken either alone or in combination teach or suggest the claim recitation "an electron-beam radiation source having an energy of less than 100 keV." To the contrary, Nakai teaches that "the electron beam acceleration voltage should be from 100 to 3,000 kV." (Page 5, column 2, paragraph 22.) The other applied references fail to supplement the above-noted shortcoming of Nakai. Further, the Office Action fails to support with prior art its assertion that that one would decrease "the particular degree of energy" from that disclosed in Nakai in order "to achieve a high degree of polymerization." (Office Action mailed June 11, 2002 at page 4, lines 16-19.)

Dependent claims 23-26 include further recitations to those of independent claim 22, and are therefore further patentable over the proposed combination of references.

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Finally, Applicants respectfully traverse the position of the previous Office Action that the statements as made on page 4, lines 7-9 and 11-12 of the Office Action are admitted prior art.

III. Conclusion

In view of the above amendments and these remarks, it is respectfully submitted that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

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ATTACHMENT

Version with Markings to Show Changes Made

In the Claims:

Claims 1, 6, and 22 have been amended as follows:

1. (Twice Amended) A packaged food product comprising:

a food product;

a package enclosing the food product, the package comprising a coated, printed film comprising:

a substrate film comprising one or more thermoplastic materials, the substrate film having a print side and an opposing food side and an average thickness of less than about 15 mils;

an image printed on the print side of the substrate film;

a radiation-cured varnish over the printed image, the radiation-cured varnish formed by:

coating the printed image with a radiation-curable varnish comprising one or more polymerizable reactants and optionally one or more photoinitiators, wherein the radiation-curable varnish includes less than about 20 % monofunctional monomer based on the weight of the radiation-curable varnish;
and

subsequently exposing the radiation-curable varnish to radiation sufficient to polymerize at least 90 weight % of the one or more polymerizable reactants;

wherein when the coated, printed film is tested according to the FDA migration test protocol, no more than 50 parts per billion total of any of the polymerizable reactants and the optional photoinitiators migrate within 10 days at 40°C from the coated, printed film into a food simulant selected from the group consisting of i) 95 weight % ethanol and 5 weight % water and

ii) 5 weight % ethanol and 95 weight % water, the food simulant enclosed within a test container formed from the coated, printed film so that the food simulant contacts the food side of the substrate film and the ratio of volume of food simulant to surface area of coated, printed film is 10 milliliters per square inch.

6. (Amended) The packaged food of claim 1 wherein the substrate film comprises ~~one or more of the polymers selected from the group consisting of~~ polyvinyl alcohol, acrylonitrile-butadiene copolymer, isobutylene-isoprene copolymer, polyacrylonitrile, polyvinylidene chloride, highly crystalline polyamide, highly crystalline polypropylene, and highly crystalline polyethylene.

22. (Amended) A packaged food product comprising:

a food product;

a package enclosing the food product, the package comprising a coated, printed film comprising:

a substrate film comprising one or more thermoplastic materials, the substrate film having a print side, an opposing food side, and an average thickness of less than about 15 mils;

an image printed on the print side of the substrate film;

a radiation-cured varnish over the printed image, the radiation-cured varnish formed by:

coating the printed image with a radiation-curable varnish comprising one or more polymerizable reactants; and

subsequently exposing the radiation-curable varnish to an electron-beam radiation source having an energy of less than about 100 keV in an amount sufficient to polymerize at least 90 weight % of the polymerizable reactants.